

The Kimberley Coast – Saltwater Country – monitoring and management of the coastal and marine zone

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This contribution is an account of how the Traditional Owners of the Kimberley coastal region are involved in land management through biological surveys, data collection, monitoring, and on-ground land management practices.

The rocky coast of the Kimberley, known as Saltwater Country by the Traditional Owners of the region, representing the peoples of Bardi Jawi, Malaya, Dambimangarri, Uuguu and Balanggarra, is the area in discussion. The Traditional Owners of this region have a long history of association with the landscape, seascape, flora and fauna and, as such carry a long term core knowledge on its environment and biology. Their involvement with the coast, islands, and marine environment dates far back as the early part of the Holocene (7000 years), when the Kimberley region was flooded by rising sea levels after the last Ice Age. They have therefore a long term traditional familiarity with the landscape, seasonal processes, and biological patterns. Since they see the land, coast and seascape as part of their traditional lives and that they are custodians or caretakers of this environment, their long-term familiarity and information base serves them well to be managers of the coast and seascape, and to be involved in monitoring.

There is need for monitoring and management of the Kimberley Coast and seascape, because in recent times there has been increased tourism, overfishing, exploitation of natural resources, increase in fires and burning out of coastal vine thickets and rainforest, and there have been pressures on endangered species. In short, the land and coastal lands are being environmentally impacted. This leads on to the conclusion that there is a need for environmental management, but good management beings with it a need for knowledge of what is occurring, such as whether biological stocks are depleting and the extent that tourism and other coastal activities are having an effect on the environments. Effectively, this requires monitoring of the various facets of the environment.

Traditional Owners bring traditional knowledge to monitoring. Because they live or have lived on the coastal lands and islands, and have harvested shell fish, oysters, and shipworm, have hunted turtles and dugongs, and have caught fish and stingrays, they have an on-ground local knowledge of the dynamics of these creatures. They carry traditional knowledge and familiarity about the land, coast and seascape, passed down through the generations that assists in their being able to manage the land and monitor its components. For instance, their knowledge of the migration and arrival and breeding

season of turtles and dugongs is the culmination of long-term observations of patterns, and enables them to be at the right place and right time to hunt or harvest specific species. And thus they can be at the right time and right place for undertaking monitoring.

The Kimberley regional ranger programme facilitated by the Kimberley Land Council on behalf of Traditional Owners, have been involved in documenting, monitoring, and management of the Kimberley Coast and its seascape in a number of ways. They have operated in collaboration with scientists of the World Wildlife Fund (WWF) and officers of Environs Kimberley. The text below and Figure 1 outline some of the activities that the ranger groups have been involved with.

With documenting, they have carried out marine biological surveys, and recording of plants and fauna in the region. Because they know the country and seascape across a number of Traditional Owner groups, some of the recent surveys were to assist in a partnership between Bardi Jawi, Mayala Dambimangarri, Uuguu and Balanggarra. This they achieved, for instance, in a marine assessments for the WWF of whales and Snub-nosed dolphins. The Bardi Jawi rangers lead this survey utilising "cybertracker" technology, integrating western science with traditional knowledge to accurately record data and achieve environmental outcomes. Biological surveys also have involved collecting and recording flora – for instance, the recording flora and vegetation in 50 m square quadrats in vine thickets, and in conjunction with Environs Kimberley, the trapping of fauna to provide an inventory of the biodiversity in vine thickets. They have also been involved with "photo-trapping" with the WWF along vine thickets to document the fauna visiting or living there. Island surveys have been undertaken for biological purposes, and to check for feral rats.

In relation to monitoring they have been involved with recording the arrival, numbers, and nesting of turtles, with the tagging and study of dugongs, with the counting of sea birds, with noting and recording the arrival of exotic diseases and the recording the of the arrival of alien plants, and the recording of the occurrence and effects of bush fires on coastal vine thickets. With the monitoring of turtles and dugongs, the rangers collect data through interviews on who has been hunting for turtles and dugongs, where they have been, how long they have stayed at a place, what they have caught, and what they have observed. Turtle and dugong tagging and the use of satellite tracking also have been used to determine migration of turtles and dugongs in terms of where they have been, and where they are feeding. All these data forms the basis for an information base to help manage the turtles and dugongs and other

sea life. To assist with the management of fish and fish stocks, there are plans to develop a monitoring programme for fishing activities.

Monitoring for the Traditional Owners is part of the "caring for country" that is part of their core philosophy.

In management, the Traditional Owners, as rangers, collate data to understand and design management programmes for various components of the environment. For instance, there are management plans for fires in the coastal vine thickets and for fires in the coastal vegetation in general. There are activities to repair eroding beaches, and to revegetate damaged dunes with native plants. They are involved in rubbish pick-up, beach debris clean-up, and weed removal along the coastal zone. They assist the Australian Quarantine and Inspection Service (AQIS)

and Environs Kimberley in monitoring and reporting of any foreign pests such as fire ants, weeds, and mosquitoes.

In addition to their traditional knowledge, obtained from Elders and their own experience on the coast, rangers obtain further formal qualifications in land management from Kimberley TAFE.

The photographs in this paper (Figure 1) illustrate some of the activities in data collection and monitoring as part of coastal land management and marine management undertaken by the Traditional Owners in the region. The data collected by rangers assist with development of cultural and environmental management plans and the management of resources within Traditional country.



Figure 1. A. Tagging of Dugongs at Pender Bay. B. Ranger in action recording turtle nesting activities. C. Rangers stabilising sand dunes. D. Rangers conducting bird surveys. E. Rangers working with AQIS on Bedford Island in the Buccaneer Archipelago, burning all contents of tourist camp. F. Fire management to create a buffer around the Monsoon Vine Thicket.